

What is claimed:

1. A control circuit for controlling a motor assembly having a coil and a movable arm, the control circuit comprising:
5 a drive circuit operable to be coupled to the coil, to receive a control signal and a speed signal, to generate a drive signal in response to the control and speed signals, and to drive the coil with the drive signal; and
a sensor circuit coupled to the drive circuit and operable to be coupled to the coil and to generate the speed signal having a level that corresponds to the speed of the arm.

10 2. The control circuit of claim 1 wherein the sensor circuit is operable to generate the speed signal by sensing a back voltage across the coil during a time period when substantially zero current is flowing through the coil and by generating the level of the speed signal such that the level corresponds to the sensed back voltage.
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20 3. The control circuit of claim 1 wherein the drive circuit is operable to accelerate the arm to a predetermined speed and to maintain the arm at approximately the predetermined speed for a predetermined time period.

25 4. A control circuit for controlling a read-write head assembly that includes a motor assembly having a coil and a movable arm, the head assembly also including a read-write head coupled to the arm, the control circuit comprising:
a drive circuit operable to receive a control signal and a speed signal and to drive the coil in response to the control and speed signals such that the read-write head moves at approximately a predetermined speed for a predetermined time period; and

30 a sensor circuit coupled to the drive circuit and operable to sense the speed of the read-write head and to generate the speed signal having a level that corresponds to the sensed speed of the read-write head.

5. The control circuit of claim 4 wherein the drive circuit is operable to drive the coil in response to the sum of the control and speed signals.
6. The control circuit of claim 4 wherein the sensor circuit is operable to sense the speed of the read-write head by sensing a back voltage across the coil during a time period when approximately zero current is flowing through the coil.
7. The control circuit of claim 4 wherein the sensor circuit is operable to: sense the speed of the read-write head by sensing a back voltage across the coil; and generate the speed signal by generating an intermediate signal from the sensed back voltage, sampling the intermediate signal during a time period when substantially zero current is flowing through the coil, and generating the level of the speed signal such that the level corresponds to the sampled intermediate signal.
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8. A control circuit for controlling a read-write head assembly that includes a motor assembly having a post, an arm having first and second ends and a midsection pivotally mounted to the post, and a coil operable to move the first end of the arm, the read-write head assembly also including a read-write head coupled to the second end of the arm, the control circuit comprising:
- a drive circuit having a control input terminal, a feedback input terminal, and a first output terminal that is operable to be coupled to a first terminal of the coil; and
- a speed-sense circuit having a first input terminal that is operable to be coupled to the first terminal of the coil and having an output terminal coupled to the feedback input terminal of the drive circuit.
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9. The control circuit of claim 8 wherein the control and feedback input terminals are coupled together.
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10. The control circuit of claim 8, further comprising a switch coupled between the feedback input terminal and the output terminal of the speed-sense circuit.

11. The control circuit of claim 8 wherein:
the drive circuit comprises a second output terminal operable to be coupled to
a second terminal of the coil; and
the speed-sense circuit comprises a second input terminal operable to be
coupled to the second terminal of the coil.

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12. A disk-drive system, comprising:
a disk having a peripheral edge;
a platform disposed adjacent to the peripheral edge of the disk;
10 a coil;
an arm;
a read-write head coupled to the arm; and
a control circuit coupled to the coil and operable to cause the coil to move the
arm such that the read-write head moves at approximately a constant speed.

15. 13. The disk-drive system of claim 12 wherein the platform has a ramped
side that faces the disk.

20. 14. The disk-drive system of claim 12 wherein the control circuit is
operable to cause the coil to park the read-write head by moving the read-write head
from over the disk onto the platform at approximately the constant speed.

25. 15. The disk-drive system of claim 12 wherein the control circuit is
operable to cause the coil to unpark the read-write head by moving the read-write
head from the platform to a position over the disk at approximately the constant
speed.

30. 16. The disk-drive system of claim 12 wherein the constant speed equals
five inches per second.

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17. The disk-drive system of claim 12, further comprising:
a post;
the arm having a first end magnetically coupled to the coil, having a second
end, and having a midsection pivotally mounted to the post; and
5 the read-write head coupled to the second end of the arm

18. The disk-drive system of claim 12, further comprising:
a post;
the arm having first and second ends and having a midsection pivotally
10 mounted to the post;
the coil mounted to the first end of the arm; and
the read-write head coupled to the second end of the arm

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15 19. A method, comprising:
accelerating a read-write head to approximately a predetermined speed; and
when or after the head attains the predetermined speed, maintaining the
speed of the head at approximately the predetermined speed.

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20 20. The method of claim 19 wherein the accelerating comprises
accelerating the read-write head from a position over a disk toward a parking
platform.

25 21. The method of claim 19 wherein the accelerating comprises
accelerating the read-write head from a position on a parking platform toward a disk.

22. The method of claim 19 wherein the maintaining comprises periodically
monitoring the speed of the read-write head.

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30 23. The method of claim 19 wherein the maintaining comprises monitoring
a back voltage across a head-motor coil during periods of approximately zero current
flow through the coil.

24. The method of claim 19 wherein the maintaining comprises maintaining the speed of the head at approximately the predetermined speed approximately until the head is on parking surface of a parking platform.

5 25. The method of claim 19 wherein the maintaining comprises maintaining the speed of the head approximately at or below the predetermined speed until the head moves to a position over a disk from a parking surface of a parking platform.

10 26. The method of claim 19 wherein the maintaining comprises periodically updating a drive signal to a head-motor coil.

15 27. A method, comprising:
coupling a drive signal to a coil of a motor assembly;
uncoupling the drive signal from the coil to allow a current flowing through the coil to decay to approximately zero;
sampling a back voltage across the coil while the approximately zero current is flowing through the coil;
adjusting the drive signal in response to the sampled back voltage; and
coupling the adjusted drive signal to the coil, the adjusted drive signal shifting
20 the back voltage toward or maintaining the back voltage substantially at a predetermined level.

25 28. The method of claim 27 wherein the sampling comprises:
determining when the current through the coil approximately equals or is less than a predetermined value; and
waiting a predetermined time after the step of determining before sampling the back voltage.

30 29. The method of claim 25 wherein:
the sampling comprises,
generating an intermediate signal that corresponds to the back voltage,
sampling the intermediate signal while the approximately zero current is flowing through the coil, and

the adjusting comprises,
generating a sum of the sampled intermediate signal and a control
signal, and
generating the drive signal corresponding to the sum.

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